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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/053,666

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Wolfgang Billinger

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EXAMINER

DINH, TIEN QUANG

ART UNIT

PAPER NUMBER

3644

MAIL DATE

DELIVERY MODE

10/16/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/053,666

Applicant(s)

BILLINGER ET AL.

Examiner

Tien Dinh

Art Unit

3644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 8/2/07.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 15, 19, 21-28, 30 and 32-34 is/are pending in the application.
- 4a) Of the above claim(s) 24, 25 and 28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15, 19, 21-23, 26, 27, 30 and 32-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 15, 19, 21-23, 26, 27, 30 and 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirahara et al (6,234,423).

Hirahara discloses a fitting 13a,b, Moveable Part 11, 14, 15 in combination and illustrated in Figure 10 #13a&b connect #11/14/15 to the tail of the aircraft (see Figure 3); both skins 11, 12 and the spar 13 are bonded by a pasty thermosetting adhesive to together form a single structure the box-structure airfoil 10 comprises a composite material upper skin 11 forming a top surface of the airfoil, a composite material lower skin 12 forming a bottom surface of the airfoil, and a composite material spar 13 (see Col. 4, lines 50-60) made from CFRP (Carbon Fiber Reinforced Polymer, see Col. 5, lines 33-41). The movable part (#11-15) is an elevator (see figure 3). The fact that Hirahara et al do not employ a resin transfer molding method is of no consequence since this limitation is a product by process limitation. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even through the prior product was made by a different process. The movable part (#11-15) is control surface (see Figure 3). Both skins 11, 12 and the spar 13 are bonded by a

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pastly thermosetting adhesive to together form a single structure. (Integral) Plus to make things integral is a routine step one skilled in the art would have used to make a stronger structure.

The box-structure airfoil 10 comprises a composite material upper skin 11 forming a top surface of the airfoil, a composite material lower skin 12 forming a bottom surface of the airfoil, and a composite material spar 13 (see Col. 4, lines 50-67) made from CFRP (Carbon Fiber Reinforced Polymer, see Col. 5, lines 33-41). The material used to make the airfoil 10 has reactive material since it is CFRP.

The fitting is imbedded in the recess as shown in figures 1 and 2. The upper covering layer and lower covering layer is 11, 12, respectively. The fitting is inbetween them. See figures 1 and 2. The indentation in the moveable part is readily seen in figure 2.

Re claim 30, since the fitting and movable parts are made out of the same material, CFRP, the thermal expansion coefficient is the same.

Hirahara does not disclose bearing.

A **bearing** is a device to permit constrained relative motion between two parts, typically rotation or linear movement

The examiner takes OFFICIAL NOTICE that bearings are notoriously well known means to permit constrained relative motion between a structural and a movable part (see for example [www.wikipedia.org](http://www.wikipedia.org)).

It would have been obvious to one having ordinary skill in the art, at the time the invention was made to use a bearing to permit constrained relative motion between the elevator and the tail.

3. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirahara in view of Koppelman et al (3,102,559). Hirahara does not disclose using nylon as a reactive material. Koppelman discloses a composite material formed by impregnating woven structure made of nylon fibers with a thermosetting resin (see col. 14, line 22). It would have been obvious to use nylon as the reactive material since nylon allows for improved tensile strengths with relatively high compression strength. Furthermore, it has been held that to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 227 F.2d 197, 125 USPQ 416 (CCPA 1960) (selection of a known plastic to make a container of a type made of plastics prior to the invention was held to be obvious.)

#### ***Response to Arguments***

The examiner thanks the applicant for submitting the affidavit by Mr. Kaufman but respectfully disagrees with the applicant that the claims are allowable. The claimed subject matter is still read upon by Hirahara and Koppelman et al. All of the claimed parts are disclosed by these two references. The fittings 13 are clearly shown and disclosed in Hirahara. Furthermore, since the applicant has not challenged the official notice that bearings are notoriously well known, this is admitted prior art.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tien Dinh whose telephone number is 571-272-6899. The examiner can normally be reached on 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Teri Luu can be reached on 571-272-7045. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TD

*Tim* *OK*